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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, KIMBINH T

ART UNIT

PAPER NUMBER

2671

DATE MAILED: 04/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/832,138

Applicant(s)

PEERCY ET AL.

Examiner

Kimbinh T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. Claims 1-20 are pending in the application.

Claim Objections

2. Claim 14, the use of the trademark OPENGL® has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 4-6, 8, 9, 12-17, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider et al. (5,777,621) in view of French et al. (6,266,053).

Claims 1 and 14, Schneider et al. discloses providing a higher-level appearance description of geometry in a retained-mode representation (col. 2, lines 27-30); traversing the retained-mode representation (a model hierarchy is traversed from top to bottom, left to right, col. 18, lines 25-37) to provide a final representation; Schneider does not teach rendering the final representation by a graphics pipeline; however, French teaches that can be rendered by a graphics pipeline (col. 5, lines 47-50); performing the graphics system interface under the OPENGGL® (col. 14, line 54). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the French's teaching into the Schneider's method for utilizing the graphics pipeline to perform multiple traversals over a segment of a path, because it would implement a caching scheme which allows a cache of pre-processed data to substitute the processing during a reverse traversal of a path (col. 5, lines 51-53).

Claims 2, 4-6, 9, 12, 16, 19 and 20, Schneider et al. discloses the retained-mode representation is a scene graph (col. 2, lines 8-12, lines 27-32; col. 4, lines 11-12); drawing the scene from the final representation (col. 5, lines 14-16); automatically selecting appearance detail (collecting in one place a number of quality control criteria such as line style, type of shaders, type of illumination, level of detail, antialiasing level, and so on, col. 8, lines 4-7) from the retained-mode representation (col. 8, lines 46-51); defining a parametric surface from the higher-level appearance and retaining geometry parameters for parametric surface (immediate mode takes data structures such as a polygon data structure as parameters, whereas retained-mode takes objects such as an EtGeometryObject as parameters (col. 28, lines 64-67);determining quality type

parameters: compute reflections, compute shadows for rendering surface) (table II; col. 42, lines 9-24; col. 46, line 57 through col. 47, line 21; fig. 16).

Claims 8 and 15, the rationale provide in the rejection of claim 1 is incorporated here in. In addition, Schneider teaches a graphics processor (fig. 1, # 110), a storage medium (col. 71, line 35).

Claims 13, 17, Schneider et al. discloses the higher-level appearance is operable to select geometry parameters to a level of detail (by creating a quality collection objects to maintain each effected quality collection in sorted order and to handle duplicate quality indices in the same quality collection, col. 44, lines 45-55) that minimizes hardware source consumption (col. 2, lines 17-30).

5. Claims 3, 7, 10, 11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider et al. (5,777,621) in view of French et al. (6,266,053) and further in view of Peercy et al. "Interactive Multi-Pass Programmable Shading" (ACM 2000).

Claims 3, 7, 10, 11, 18, Schneider does not teach traversing the another retained-mode; however, Peercy et al. discloses traversing the retained-mode to provide another retained-mode (another Cosmo3D scene graph) and traversing the another retained-mode to provide the final representation of the scene (a drawaction applied to this second scene graph renders the final image) (section 2.4, page 428); the final representation (a final color or a final solution in multiple passes) based on the group consisting of performance characteristics of the graphics pipeline; the higher-level appearance consisting of a programmable shading; a reflective map; a bump map (see

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Abstract, Introduction and 1.1 Related work, pages 425-426). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the Peercy's teaching into the Schneider's method for utilizing the graphics pipeline to produce final image, because utilizing the OpenGL rendering pipeline, it would support programmable shading in interactive visual computing into multiple passes through graphics hardware (Introduction, page 425).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kimbinh Nguyen** whose telephone number is **(703) 305-9683**. The examiner can normally be reached **(Monday- Thursday from 7:00 AM to 4:30 PM and alternate Fridays from 7:00 AM to 3:30 PM)**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached at (703) 305-9798.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Part II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Kimbinh Nguyen

April 15, 2003



MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600